UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE : February 7, 2012

SUBJECT: Region III Data QA Review

FROM: Colleen Walling
Region III ESAT RPO (3EA20)

TO: Rich Fetzer
Remedial Project Manager (3HS31)

Attached is the organic data validation report for the Dimock Residential Groundwater site (Case #: 180-3644-01) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachment

TO: #0037 TDF: #002018A

cc: Gene Nance (Techlaw)
Suddha Graves (Techlaw)

Lockheed Martin IS&GS – Civil
Energy & Environment
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Ex. 4 - CBI

LOCKHEED MARTIN
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Date: February 07, 2012

Subject: Inorganic Data Validation (IM2 Level)
Project: 180-3644-1
Site: Dimock

From: Ex. 4 - CBI
Inorganic Data Reviewer

Ex. 4 - CBI
Senior Oversight Chemist

To: Colleen Walling
ESAT Region 3 Project Officer

OVERVIEW

Third party Project 180-3644-1 consisted of eleven (11) aqueous samples analyzed for the following parameters according to the methods listed below. Samples were analyzed by TestAmerica-Pittsburgh (TALPA) through the Delivery of Analytical Services (DAS) program.

Parameter	Analytical method	Parameter	Analytical method
Ammonia	EPA 350.1	Acidity	SM 2310B
HEM (Oil & Grease)	EPA 1664A	Chloride	EPA 300.0
Alkalinity	SM 2320B	Total Dissolved Solids	SM 2540C
Total Suspended Solids	SM 2540D	pH	SM 4500H+ B
Methylene Blue Active Substances	SM 5540C		

SUMMARY

Data were validated according to Region 3 Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2, and is assigned the Superfund Data Validation Label S4VM (Stage_4_Validation_Manual). Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by sample holding time infraction and outliers present in laboratory blanks. Details of these outliers are discussed under "Major and Minor Problems," specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on Data Summary Forms (DSFs).

MAJOR PROBLEM

The holding time of forty-eight (48) hours from the time of sample collection to sample analysis for Methylene Blue Active Substances has been exceeded by four (4) days for all samples. Positive results for this analyte may be biased low; however, the "L" qualifier for this outlier has been superseded by "B" on the DSFs. Quantitation limits for this analyte in affected samples are unusable and have been qualified "R" on the DSFs.

MINOR PROBLEM

Method Blanks (MBs) had reported results greater than the Method Detection Limits (MDLs) for ammonia, alkalinity and Methylene Blue Active Substances. Positive results for these parameters in affected samples which are less than five times (<5X) blank concentrations may be biased high and have been qualified "B" on the DSFs.

NOTES

Results for quality control analyses [Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD), laboratory duplicate and matrix spike] were within control limits for all parameters for the samples in this sample set.

Test parameter Oil & Grease is officially named n-Hexane Extractable Material (HEM).

Sample volumes other than one (1) liter were used in the analysis of HEM for the samples in this sample set. Dilution factors were adjusted on the DSF to reflect this variance.

Sample volume other than 250 milliliters was used in the analysis of Total Suspended Solids for sample S-1. The dilution factor was adjusted on the DSF to reflect this variance.

The requirement for ammonia, Total Dissolved Solids and Total Suspended Solids MDLs to be performed within one (1) year of analysis of samples was not met by the laboratory. No action was taken by the reviewer based on this finding.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

Table 1A	Summary of qualifiers on data summary forms after data validation
Table 1B	Codes used in comments column of Table 1A
Appendix A	Glossary of Data Qualifier Codes
Appendix B	Data Summary Form(s)
Appendix C	Chain of Custody Records
Appendix D	Laboratory Case Narrative

DCN: 180-3644-1_General

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Project: 180-3644-1

ANALYTE	SAMPLES AFFECTED	POSITIVE VALUES	NON-DETECTED VALUES	BIAS	COMMENTS*
Ammonia	All samples except H-1	B		High	MB (0.0360 J mg/L)
Alkalinity	D-1	B		High	MB (2.88 J mg/L)
Methylene Blue Active Substances	All sample except S-1, R-1, R-2	B		High	MB (0.0177 J mg/L) HT (4 days)
	S-1, R-1, R-2		R		HT (4 days)

* See explanation of comments in Table 1B

TABLE 1B
CODES USED IN COMMENTS COLUMN

MB	=	Method blanks had results >MDLs [results are in parenthesis]. Positive results which are <5X blank concentrations may be biased high.
HT	=	The technical holding time from time of sample collection to sample analysis was exceeded [number of days exceeded in parenthesis]. Positive results may be biased low. Quantitation limits are unusable.

Appendix A
Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION
(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION
(can be used for both positive results and sample quantitation limits):

J = Analyte present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B
Data Summary Forms

Project #: 180-3644-1
Site : DIMOCK
Lab. : TALPA

Number of Soil Samples : 0
Number of Water Samples : 11

Sample Number / Location:		H-1		FH-1		FPT-1		S-1		R-1	
Laboratory ID :		180-3644-1		180-3644-2		180-3644-3		180-3644-4		180-3644-5	
Matrix :		Water		Water		Water		Water		Water	
Units :		mg/L		mg/L		mg/L		mg/L		mg/L	
Date Sampled :		9/01/2011		9/01/2011		9/01/2011		9/01/2011		9/01/2011	
Time Sampled :		11:15		08:40		9:35		10:15		13:20	
Dilution Factor :		1.0 / 0.96		1.0 / 0.94		1.0 / 0.96		1.0 / 0.95 / 2.0		1.0 / 0.93	
ANALYTE	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Ammonia, distilled	0.10	0.29		0.096	B	0.084	B	0.068	B	0.050	B
Acidity	5.0										
HEM (Oil & Grease)	5.0	+		+		+		+		+	
Chloride	1.0	3.8		46		32		17		3.9	
Alkalinity	5.0	49		91		96		91		120	
Total Dissolved Solids (TDS)	10	43		190		230		140		120	
Total Suspended Solids (TSS)	4.0			6.4				110 +			
Methylene Blue Active Substances	0.050	0.013	B	0.022	B	0.013	B		R		R

Sample Number / Location:		H-1		FH-1		FPT-1		S-1		R-1	
Laboratory ID :		180-3644-1		180-3644-2		180-3644-3		180-3644-4		180-3644-5	
Matrix :		Water		Water		Water		Water		Water	
Units :		SU		SU		SU		SU		SU	
Date Sampled :		9/01/2011		9/01/2011		9/01/2011		9/01/2011		9/01/2011	
Time Sampled :		11:15		08:40		9:35		10:15		13:20	
Dilution Factor :		1.0		1.0							
ANALYTE	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
pH	0.100	8.79		7.03		7.29		7.05		7.86	

RL = Reporting Limit
SEE NARRATIVE FOR CODE DEFINITIONS
To calculate sample quantitation limits: (RL * Dilution Factor)
"+" = See Narrative
Revised 09/99

Project #: 180-3644-1
Site : DIMOCK
Lab. : TALPA

Sample Number / Location:		R-2		RD-1		RU-1		KDE-1		N-1	
Laboratory ID :		180-3644-6		180-3644-7		180-3644-8		180-3644-9		180-3644-10	
Matrix :		Water		Water		Water		Water		Water	
Units :		mg/L		mg/L		mg/L		mg/L		mg/L	
Date Sampled :		9/01/2011		9/01/2011		9/01/2011		9/01/2011		9/01/2011	
Time Sampled :		13:40		14:10		14:45		15:35		17:45	
Dilution Factor :		1.0 / 0.93		1.0 / 1.14		1.0		1.0 / 0.93		1.0 / 0.97	
ANALYTE	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Ammonia, distilled	0.10	0.079	B	0.066	B	0.098	B	0.16	B	0.062	B
Acidity	5.0										
HEM (Oil & Grease)	5.0	+		+		+		+		+	
Chloride	1.0	3.9		8.2		8.3		30		22	
Alkalinity	5.0	120		25		25		190		24	
Total Dissolved Solids (TDS)	10	130		53		57		220		71	
Total Suspended Solids (TSS)	4.0										
Methylene Blue Active Substances	0.050		R	0.018	B	0.013	B	0.018	B	0.013	B

Sample Number / Location:		R-2		RD-1		RU-1		KDE-1		N-1	
Laboratory ID :		180-3644-6		180-3644-7		180-3644-8		180-3644-9		180-3644-10	
Matrix :		Water		Water		Water		Water		Water	
Units :		SU		SU		SU		SU		SU	
Date Sampled :		9/01/2011		9/01/2011		9/01/2011		9/01/2011		9/01/2011	
Time Sampled :		13:40		14:10		14:45		15:35		17:45	
Dilution Factor :		1.0		1.0							
ANALYTE	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
pH	0.100	7.89		7.40		7.22		9.00		7.38	

RL = Reporting Limit SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (RL * Dilution Factor)

"+" = See Narrative Revised 09/99

Project #: 180-3644-1
Site : DIMOCK
Lab. : TALPA

Sample Number / Location:		D-1									
Laboratory ID :		180-3644-11									
Matrix :		Water									
Units :		mg/L									
Date Sampled :		9/01/2011									
Time Sampled :		18:15									
Dilution Factor :		1.0 / 0.98									
ANALYTE	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Ammonia, distilled	0.10	0.048	B								
Acidity	5.0	6.0									
HEM (Oil & Grease)	5.0	+									
Chloride	1.0	4.8									
Alkalinity	5.0	2.3	B								
Total Dissolved Solids (TDS)	10	25									
Total Suspended Solids (TSS)	4.0										
Methylene Blue Active Substances	0.050	0.018	B								

Sample Number / Location:		D-1									
Laboratory ID :		180-3644-11									
Matrix :		Water									
Units :		SU									
Date Sampled :		9/01/2011									
Time Sampled :		18:15									
Dilution Factor :		1.0									
ANALYTE	RL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
pH	0.100	6.29									

RL = Reporting Limit SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (RL * Dilution Factor)

"+" = See Narrative Revised 09/99

Appendix C
Chain of Custody Records

CABOT-EPA 003754

Chain of Custody Record

TestAmerica Laboratory location: Pittsburgh (Water)

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica — THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

COC No: 005410

___ of ___ COCs

Client Contact

Company Name: URS Corporation

Address: 501 Holiday Dr., Suite 300

City/State/Zip: Pittsburgh, PA 15220

Phone: 412-503-4700

Project Name: K&L Gates Focused Site Assessment

Project Number: 39938688.00001

PO# 694872

Client Project Manager: Thomas Merski

Telephone: 412-503-4603

Email: James_Pinta@urscorp.com

David_Blaushild@urscorp.com

Method of Shipment/Carrier: FedEx Next Day Air

Shipping/Tracking No:

Site Contact: Jim Pinta

Telephone: 412-860-6342 (cell)

Analysis Turnaround Time

TAT if different from below ___

☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day

Lab Contact: Carrie Gamber

Telephone: 412-963-7058

Analyses: VOCs; SVOCs; Metals (Total/Dissolved) (lab filtered); Total Phos / Short list for petroleum products; HEM; Chloride, pH, Alkalinity, Sulfate, TDS; Ammonia; Glycols; DRO/GRO; MBAS

Sample Identification	Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other	VOCs	SVOCs	Metals	Total Phos	HEM	Chloride, pH, Alkalinity	Ammonia	Glycols	DRO/GRO	MBAS	Sample Specific Notes / Special Instructions
H-1	9/1/11	11:15 AM	X												X	X	X	X	X	X	X	X	X	X	
FH-1	9/1/11	8:40 AM	X												↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
FPT-1	9/1/11	9:35 AM	X																						
S-1	9/1/11	10:15 AM	X																						
R-1	9/1/11	1:20 PM	X																						
R-2	9/1/11	1:40 PM	X																						
RD-1	9/1/11	2:10 PM	X																						
RY-1 / RDE-1	9/1/11	2:45 PM / 3:35 PM	X																						
N-1	9/1/11	5:45 PM	X																						
D-1	9/1/11	6:15 PM	X												↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS Corp	9/1/11			
[signature]	URS Corp	9/6/11 9:00 AM	[signature]	TA Pitt	9/6/11 0900
			Received in Laboratory by:		

TAL 0018-1 (04/10)

Appendix D
Laboratory Case Narrative

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job Number: 180-3644-1

SDG No.:

Project: Focused Site Assessment

Client Sample ID	Lab Sample ID
H-1	180-3644-1
FH-1	180-3644-2
FPT-1	180-3644-3
S-1	180-3644-4
R-1	180-3644-5
R-2	180-3644-6
RD-1	180-3644-7
RU-1	180-3644-8
KDE-1	180-3644-9
N-1	180-3644-10
D-1	180-3644-11

Comments:

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 180-3644-1

Job Description: Focused Site Assessment

For:
URS Corporation
Foster Plaza 4
501 Holiday Drive, Suite 300
Pittsburgh, PA 15220

Attention: Mr. James Pinta, Jr.

Approved for release.
Carrie L Gamber
Project Manager II
10/5/2011 2:09 PM

Carrie L Gamber
Project Manager II
carrie.gamber@testamericainc.com
10/05/2011

TestAmerica Laboratories, Inc.
TestAmerica Pittsburgh 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238
Tel (412) 963-7058 Fax (412) 963-2468 www.testamericainc.com

CASE NARRATIVE

Client: URS Corporation

Project: Focused Site Assessment

Report Number: 180-3644-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 09/06/2011; the samples arrived in good condition, properly preserved and on ice.

The laboratory received a broken 1-liter bottle for sample FPT-1 (180-3644-3).

The laboratory did not receive sulfuric acid preserved vials for samples FPT-1 (180-3644-3) and D-1 (180-3644-11). An aliquot was taken from an un-preserved 1-liter amber glass bottle and preserved for TOC.

No Sodium thiosulfate vials were received for samples FPT-1 (180-3644-3), D-1 (180-3644-11), and N-1 (180-3644-10). An aliquot was taken from an un-preserved 1-liter amber glass bottle and preserved for method 8011.

The DRO volume for sample FPT-1 (180-3644-3) was received in a 1l-liter plastic container.

LOW LEVEL VOLATILE ORGANIC COMPOUNDS
Chloroform, Naphthalene and Toluene were detected in method blank MB 180-14017/3 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

8011 GAS CHROMATOGRAPHY
No difficulties were encountered during the EDB analyses.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)
No difficulties were encountered during the semivolatiles analyses.

GAS RANGE ORGANICS
GRO (C6-C10) was detected in method blank MB 480-30437/3 at a level that was above the method detection limit but below the reporting limit. The value should be considered estimate, and has been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

DISSOLVED GASES
Due to the concentration of target compounds detected, samples H-1 (180-3644-1)[1000X], FH-1 (180-3644-2)[20X], R-1 (180-3644-5) [1000X], R-1 (180-3644-5)[200X], R-2 (180-3644-6)[100X], R-2 (180-3644-6)[1000X] and KDE-1 (180-3644-9)[10X] were analyzed at a dilution. The reporting limits have been adjusted accordingly.

GLYCOLS
The matrix spike and matrix spike duplicate of sample H-1 (180-3644-1) recovered outside of the control limits for Triethylene Glycol.

DIESEL RANGE ORGANICS
No difficulties were encountered during the DRO analyses.

METALS
The serial dilution of sample H-1 (180-3644-1) was outside of the percent difference control limits for several metals.

The method blanks had analytes detected at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

The sodium concentrations found in the continuing calibration blanks three thru eight (CCB3 thru CCB8) were greater than the reporting limit (100ug/l) All associated samples bracketed by these CCB's had sodium concentrations at least 100x greater than the CCB concentrations. The CCB concentrations were more than likely caused by "memory effect" and no positive bias in the results is suspected

The manganese concentrations found in the continuing calibration blanks five, seven and eight (CCB5, CCB7 and CCB8) were greater than the reporting limit (0.5ug/l). All associated samples bracketed by these CCB's had manganese concentrations at least 10x greater than the CCB concentrations. The CCB concentrations were more than likely caused by "memory effect" and no positive bias in the results is suspected.

GENERAL CHEMISTRY

pH is a field parameter. Laboratory pH analysis was completed at the request of the client.

The samples were analyzed outside of the holding time for MBAS.

Due to the matrix, the initial volume used for the following sample deviated from the standard procedure for method 2540D: S-1 (180-3644-4). The reporting limits (RLs) have been adjusted proportionately.

The method blanks had analytes detected at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

Login Container Summary Report

Temperature readings: _____

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
H-1	180-3644-A-1	Plastic 1 liter - unpreserved			
H-1	180-3644-B-1	Amber Glass 1 liter - Hydrochloric	2		
H-1	180-3644-C-1	Amber Glass 1 liter - Hydrochloric	2		
H-1	180-3644-D-1	Amber Glass 1 liter - Sulfuric Acid	2		
H-1	180-3644-E-1	Amber Glass 1 liter - Sulfuric Acid	2		
H-1	180-3644-F-1	Amber Glass 1 liter - unpreserved			
H-1	180-3644-G-1	Amber Glass 1 liter - unpreserved			
H-1	180-3644-H-1	Plastic 500ml - with Nitric Acid	2		
H-1	180-3644-I-1	Plastic 500ml - unpreserved			
H-1	180-3644-J-1	Plastic 250ml - with Sulfuric Acid	2		
H-1	180-3644-K-1	Voa Vial 40ml - unpreserved			
H-1	180-3644-L-1	Voa Vial 40ml - unpreserved			
H-1	180-3644-M-1	Voa Vial 40ml - unpreserved			
H-1	180-3644-N-1	Voa Vial 40ml - Hydrochloric Acid	P		
H-1	180-3644-O-1	Voa Vial 40ml - Hydrochloric Acid	↓		
H-1	180-3644-P-1	Voa Vial 40ml - Hydrochloric Acid			
H-1	180-3644-Q-1	Voa Vial 40ml - Hydrochloric Acid			
H-1	180-3644-R-1	Voa Vial 40ml - Hydrochloric Acid			
H-1	180-3644-S-1	Voa Vial 40ml - Hydrochloric Acid			
H-1	180-3644-T-1	Voa Vial 40ml - with Sodium	P		
H-1	180-3644-U-1	Voa Vial 40ml - with Sodium	↓		
H-1	180-3644-V-1	Voa Vial 40ml - with Sulfuric Acid			
H-1	180-3644-W-1	Voa Vial 40ml - with Sulfuric Acid			
FH-1	180-3644-A-2	Plastic 1 liter - unpreserved			
FH-1	180-3644-B-2	Amber Glass 1 liter - Hydrochloric	2		
FH-1	180-3644-C-2	Amber Glass 1 liter - Hydrochloric	2		
FH-1	180-3644-D-2	Amber Glass 1 liter - Sulfuric Acid	2		
FH-1	180-3644-E-2	Amber Glass 1 liter - Sulfuric Acid	2		
FH-1	180-3644-F-2	Amber Glass 1 liter - unpreserved			
FH-1	180-3644-G-2	Amber Glass 1 liter - unpreserved			
FH-1	180-3644-H-2	Plastic 500ml - with Nitric Acid	2		
FH-1	180-3644-I-2	Plastic 500ml - unpreserved			
FH-1	180-3644-J-2	Plastic 250ml - with Sulfuric Acid	2		
FH-1	180-3644-K-2	Voa Vial 40ml - unpreserved			
FH-1	180-3644-L-2	Voa Vial 40ml - unpreserved			
FH-1	180-3644-M-2	Voa Vial 40ml - unpreserved			

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
FH-1	180-3644-N-2	Voa Vial 40ml - Hydrochloric Acid	P		
FH-1	180-3644-O-2	Voa Vial 40ml - Hydrochloric Acid			
FH-1	180-3644-P-2	Voa Vial 40ml - Hydrochloric Acid			
FH-1	180-3644-Q-2	Voa Vial 40ml - Hydrochloric Acid			
FH-1	180-3644-R-2	Voa Vial 40ml - Hydrochloric Acid			
FH-1	180-3644-S-2	Voa Vial 40ml - Hydrochloric Acid			
FH-1	180-3644-T-2	Voa Vial 40ml - with Sodium			
FH-1	180-3644-U-2	Voa Vial 40ml - with Sodium			
FH-1	180-3644-V-2	Voa Vial 40ml - with Sulfuric Acid			
FH-1	180-3644-W-2	Voa Vial 40ml - with Sulfuric Acid			
FPT-1	180-3644-A-3	Plastic 1 liter - unpreserved			
FPT-1	180-3644-B-3	Amber Glass 1 liter - Hydrochloric	2		
FPT-1	180-3644-C-3	Amber Glass 1 liter - Hydrochloric	2		
FPT-1	180-3644-D-3	Amber Glass 1 liter - Sulfuric Acid	2		
FPT-1	180-3644-F-3	Amber Glass 1 liter - ~~unpreserved~~ Sulfuric Acid	2		
FPT-1	180-3644-G-3	Amber Glass 1 liter - unpreserved			
FPT-1	180-3644-H-3	Plastic 500ml - with Nitric Acid	2		
FPT-1	180-3644-I-3	Plastic 500ml - unpreserved			
FPT-1	180-3644-J-3	Plastic 250ml - with Sulfuric Acid	2		
FPT-1	180-3644-K-3	Voa Vial 40ml - unpreserved			
FPT-1	180-3644-L-3	Voa Vial 40ml - unpreserved			
FPT-1	180-3644-M-3	Voa Vial 40ml - unpreserved			
FPT-1	180-3644-N-3	Voa Vial 40ml - Hydrochloric Acid	P		
FPT-1	180-3644-O-3	Voa Vial 40ml - Hydrochloric Acid			
FPT-1	180-3644-P-3	Voa Vial 40ml - Hydrochloric Acid			
FPT-1	180-3644-Q-3	Voa Vial 40ml - Hydrochloric Acid			
FPT-1	180-3644-R-3	Voa Vial 40ml - Hydrochloric Acid			
FPT-1	180-3644-S-3	Voa Vial 40ml - Hydrochloric Acid			
FPT-1	180-3644-T-3	Voa Vial 40ml - with Sodium			
FPT-1	180-3644-U-3	Voa Vial 40ml - with Sodium			
FPT-1	180-3644-V-3	Voa Vial 40ml - with Sulfuric Acid			
FPT-1	180-3644-W-3	Voa Vial 40ml - with Sulfuric Acid			
S-1	180-3644-A-4	Plastic 1 liter - unpreserved			
S-1	180-3644-B-4	Amber Glass 1 liter - Hydrochloric	2		
S-1	180-3644-C-4	Amber Glass 1 liter - Hydrochloric	2		
S-1	180-3644-D-4	Amber Glass 1 liter - Sulfuric Acid	2		
S-1	180-3644-E-4	Amber Glass 1 liter - Sulfuric Acid	2		
S-1	180-3644-F-4	Amber Glass 1 liter - unpreserved			
S-1	180-3644-G-4	Amber Glass 1 liter - unpreserved			

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
S-1	180-3644-H-4	Plastic 500ml - with Nitric Acid	2		
S-1	180-3644-I-4	Plastic 500ml - unpreserved			
S-1	180-3644-J-4	Plastic 250ml - with Sulfuric Acid	2		
S-1	180-3644-K-4	Voa Vial 40ml - unpreserved			
S-1	180-3644-L-4	Voa Vial 40ml - unpreserved			
S-1	180-3644-M-4	Voa Vial 40ml - unpreserved			
S-1	180-3644-N-4	Voa Vial 40ml - Hydrochloric Acid	p		
S-1	180-3644-O-4	Voa Vial 40ml - Hydrochloric Acid			
S-1	180-3644-P-4	Voa Vial 40ml - Hydrochloric Acid			
S-1	180-3644-Q-4	Voa Vial 40ml - Hydrochloric Acid			
S-1	180-3644-R-4	Voa Vial 40ml - Hydrochloric Acid			
S-1	180-3644-S-4	Voa Vial 40ml - Hydrochloric Acid			
S-1	180-3644-T-4	Voa Vial 40ml - with Sodium			
S-1	180-3644-U-4	Voa Vial 40ml - with Sodium			
S-1	180-3644-V-4	Voa Vial 40ml - with Sulfuric Acid			
S-1	180-3644-W-4	Voa Vial 40ml - with Sulfuric Acid			
R-1	180-3644-A-5	Plastic 1 liter - unpreserved			
R-1	180-3644-B-5	Amber Glass 1 liter - Hydrochloric	2		
R-1	180-3644-C-5	Amber Glass 1 liter - Hydrochloric	2		
R-1	180-3644-D-5	Amber Glass 1 liter - unpreserved			
R-1	180-3644-E-5	Amber Glass 1 liter - unpreserved			
R-1	180-3644-F-5	Amber Glass 1 liter - unpreserved			
R-1	180-3644-G-5	Amber Glass 1 liter - unpreserved			
R-1	180-3644-H-5	Plastic 500ml - with Nitric Acid	2		
R-1	180-3644-I-5	Plastic 500ml - unpreserved			
R-1	180-3644-J-5	Plastic 250ml - with Sulfuric Acid	2		
R-1	180-3644-K-5	Voa Vial 40ml - unpreserved			
R-1	180-3644-L-5	Voa Vial 40ml - unpreserved			
R-1	180-3644-M-5	Voa Vial 40ml - unpreserved			
R-1	180-3644-N-5	Voa Vial 40ml - Hydrochloric Acid	p		
R-1	180-3644-O-5	Voa Vial 40ml - Hydrochloric Acid			
R-1	180-3644-P-5	Voa Vial 40ml - Hydrochloric Acid			
R-1	180-3644-Q-5	Voa Vial 40ml - Hydrochloric Acid			
R-1	180-3644-R-5	Voa Vial 40ml - Hydrochloric Acid			
R-1	180-3644-S-5	Voa Vial 40ml - Hydrochloric Acid			
R-1	180-3644-T-5	Voa Vial 40ml - Hydrochloric Acid			
R-1	180-3644-U-5	Voa Vial 40ml - Hydrochloric Acid			
R-1	180-3644-V-5	Voa Vial 40ml - with Sulfuric Acid			
R-1	180-3644-W-5	Voa Vial 40ml - with Sulfuric Acid			

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
R-2	180-3644-A-6	Plastic 1 liter - unpreserved			
R-2	180-3644-B-6	Amber Glass 1 liter - Hydrochloric	2		
R-2	180-3644-C-6	Amber Glass 1 liter - Hydrochloric	2		
R-2	180-3644-D-6	Amber Glass 1 liter - Sulfuric Acid	2		
R-2	180-3644-E-6	Amber Glass 1 liter - Sulfuric Acid	2		
R-2	180-3644-F-6	Amber Glass 1 liter - unpreserved			
R-2	180-3644-G-6	Amber Glass 1 liter - unpreserved			
R-2	180-3644-H-6	Plastic 500ml - with Nitric Acid	2		
R-2	180-3644-I-6	Plastic 500ml - unpreserved			
R-2	180-3644-J-6	Plastic 250ml - with Sulfuric Acid	2		
R-2	180-3644-K-6	Voa Vial 40ml - unpreserved			
R-2	180-3644-L-6	Voa Vial 40ml - unpreserved			
R-2	180-3644-M-6	Voa Vial 40ml - unpreserved			
R-2	180-3644-N-6	Voa Vial 40ml - Hydrochloric Acid	P		
R-2	180-3644-O-6	Voa Vial 40ml - Hydrochloric Acid			
R-2	180-3644-P-6	Voa Vial 40ml - Hydrochloric Acid			
R-2	180-3644-Q-6	Voa Vial 40ml - Hydrochloric Acid			
R-2	180-3644-R-6	Voa Vial 40ml - Hydrochloric Acid			
R-2	180-3644-S-6	Voa Vial 40ml - Hydrochloric Acid			
R-2	180-3644-T-6	Voa Vial 40ml - Hydrochloric Acid			
R-2	180-3644-U-6	Voa Vial 40ml - Hydrochloric Acid			
R-2	180-3644-V-6	Voa Vial 40ml - with Sulfuric Acid			
R-2	180-3644-W-6	Voa Vial 40ml - with Sulfuric Acid			
RD-1	180-3644-A-7	Plastic 1 liter - unpreserved			
RD-1	180-3644-B-7	Amber Glass 1 liter - Hydrochloric	2		
RD-1	180-3644-D-7	Amber Glass 1 liter - Sulfuric Acid	2		
RD-1	180-3644-E-7	Amber Glass 1 liter - Sulfuric Acid	2		
RD-1	180-3644-F-7	Amber Glass 1 liter - unpreserved			
RD-1	180-3644-G-7	Amber Glass 1 liter - unpreserved			
RD-1	180-3644-H-7	Plastic 500ml - with Nitric Acid	2		
RD-1	180-3644-I-7	Plastic 500ml - unpreserved			
RD-1	180-3644-J-7	Plastic 250ml - with Sulfuric Acid	2		
RD-1	180-3644-K-7	Voa Vial 40ml - unpreserved			
RD-1	180-3644-L-7	Voa Vial 40ml - unpreserved			
RD-1	180-3644-M-7	Voa Vial 40ml - unpreserved			
RD-1	180-3644-N-7	Voa Vial 40ml - Hydrochloric Acid	P		
RD-1	180-3644-O-7	Voa Vial 40ml - Hydrochloric Acid			
RD-1	180-3644-P-7	Voa Vial 40ml - Hydrochloric Acid			
RD-1	180-3644-Q-7	Voa Vial 40ml - Hydrochloric Acid			

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
RD-1	180-3644-R-7	Voa Vial 40ml - Hydrochloric Acid	ρ		
RD-1	180-3644-S-7	Voa Vial 40ml - Hydrochloric Acid			
RD-1	180-3644-T-7	Voa Vial 40ml - with Sodium			
RD-1	180-3644-U-7	Voa Vial 40ml - with Sodium			
RD-1	180-3644-V-7	Voa Vial 40ml - with Sulfuric Acid			
RD-1	180-3644-W-7	Voa Vial 40ml - with Sulfuric Acid			
RV-1	180-3644-A-8	Plastic 1 liter - unpreserved			
RV-1	180-3644-B-8	Amber Glass 1 liter - Hydrochloric	2		
RV-1	180-3644-C-8	Amber Glass 1 liter - Hydrochloric	2		
RV-1	180-3644-D-8	Amber Glass 1 liter - Sulfuric Acid	2		
RV-1	180-3644-E-8	Amber Glass 1 liter - Sulfuric Acid	2		
RV-1	180-3644-F-8	Amber Glass 1 liter - unpreserved	~~2~~		
RV-1	180-3644-G-8	Amber Glass 1 liter - unpreserved			
RV-1	180-3644-H-8	Plastic 500ml - with Nitric Acid	2		
RV-1	180-3644-I-8	Plastic 500ml - unpreserved			
RV-1	180-3644-J-8	Plastic 250ml - with Sulfuric Acid	2		
RV-1	180-3644-K-8	Voa Vial 40ml - unpreserved			
RV-1	180-3644-L-8	Voa Vial 40ml - unpreserved			
RV-1	180-3644-M-8	Voa Vial 40ml - unpreserved			
RV-1	180-3644-N-8	Voa Vial 40ml - Hydrochloric Acid	ρ		
RV-1	180-3644-O-8	Voa Vial 40ml - Hydrochloric Acid			
RV-1	180-3644-P-8	Voa Vial 40ml - Hydrochloric Acid			
RV-1	180-3644-Q-8	Voa Vial 40ml - Hydrochloric Acid			
RV-1	180-3644-R-8	Voa Vial 40ml - Hydrochloric Acid			
RV-1	180-3644-S-8	Voa Vial 40ml - Hydrochloric Acid			
RV-1	180-3644-T-8	Voa Vial 40ml - with Sodium			
RV-1	180-3644-U-8	Voa Vial 40ml - with Sodium			
RV-1	180-3644-V-8	Voa Vial 40ml - with Sulfuric Acid			
RV-1	180-3644-W-8	Voa Vial 40ml - with Sulfuric Acid			
KDE-1	180-3644-A-9	Plastic 1 liter - unpreserved			
KDE-1	180-3644-B-9	Amber Glass 1 liter - Hydrochloric	2		
KDE-1	180-3644-C-9	Amber Glass 1 liter - Hydrochloric	2		
KDE-1	180-3644-D-9	Amber Glass 1 liter - unpreserved			
KDE-1	180-3644-E-9	Amber Glass 1 liter - unpreserved			
KDE-1	180-3644-F-9	Amber Glass 1 liter - unpreserved			
KDE-1	180-3644-G-9	Amber Glass 1 liter - unpreserved			
KDE-1	180-3644-H-9	Plastic 500ml - with Nitric Acid	2		
KDE-1	180-3644-I-9	Plastic 500ml - unpreserved			
KDE-1	180-3644-J-9	Plastic 250ml - with Sulfuric Acid	2		

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
KDE-1	180-3644-K-9	Voa Vial 40ml - unpreserved			
KDE-1	180-3644-L-9	Voa Vial 40ml - unpreserved			
KDE-1	180-3644-M-9	Voa Vial 40ml - unpreserved			
KDE-1	180-3644-N-9	Voa Vial 40ml - Hydrochloric Acid	P		
KDE-1	180-3644-O-9	Voa Vial 40ml - Hydrochloric Acid			
KDE-1	180-3644-P-9	Voa Vial 40ml - Hydrochloric Acid			
KDE-1	180-3644-Q-9	Voa Vial 40ml - Hydrochloric Acid			
KDE-1	180-3644-R-9	Voa Vial 40ml - Hydrochloric Acid			
KDE-1	180-3644-S-9	Voa Vial 40ml - Hydrochloric Acid			
KDE-1	180-3644-T-9	Voa Vial 40ml - Hydrochloric Acid			
KDE-1	180-3644-U-9	Voa Vial 40ml - Hydrochloric Acid			
KDE-1	180-3644-V-9	Voa Vial 40ml - with Sulfuric Acid			
KDE-1	180-3644-W-9	Voa Vial 40ml - with Sulfuric Acid			
N-1	180-3644-A-10	Plastic 1 liter - unpreserved			
N-1	180-3644-B-10	Amber Glass 1 liter - Hydrochloric	2		
N-1	180-3644-C-10	Amber Glass 1 liter - Hydrochloric	2		
N-1	180-3644-D-10	Amber Glass 1 liter - unpreserved			
N-1	180-3644-E-10	Amber Glass 1 liter - unpreserved			
N-1	180-3644-F-10	Amber Glass 1 liter - unpreserved			
N-1	180-3644-G-10	Amber Glass 1 liter - unpreserved			
N-1	180-3644-H-10	Plastic 500ml - with Nitric Acid	2		
N-1	180-3644-I-10	Plastic 500ml - unpreserved			
N-1	180-3644-J-10	Plastic 250ml - with Sulfuric Acid	2		
N-1	180-3644-K-10	Voa Vial 40ml - unpreserved			
N-1	180-3644-L-10	Voa Vial 40ml - unpreserved			
N-1	180-3644-M-10	Voa Vial 40ml - unpreserved			
N-1	180-3644-N-10	Voa Vial 40ml - Hydrochloric Acid	P		
N-1	180-3644-O-10	Voa Vial 40ml - Hydrochloric Acid			
N-1	180-3644-P-10	Voa Vial 40ml - Hydrochloric Acid			
N-1	180-3644-Q-10	Voa Vial 40ml - Hydrochloric Acid			
N-1	180-3644-R-10	Voa Vial 40ml - Hydrochloric Acid			
N-1	180-3644-S-10	Voa Vial 40ml - Hydrochloric Acid			
N-1	180-3644-T-10	Voa Vial 40ml - with Sodium		0153446W	
N-1	180-3644-U-10	Voa Vial 40ml - with Sodium		0153446W	
N-1	180-3644-V-10	Voa Vial 40ml - with Sulfuric Acid			
N-1	180-3644-W-10	Voa Vial 40ml - with Sulfuric Acid			
D-1	180-3644-A-11	Plastic 1 liter - unpreserved			
D-1	180-3644-B-11	Amber Glass 1 liter - Hydrochloric	2		
D-1	180-3644-C-11	Amber Glass 1 liter - Hydrochloric	2		

Client Sample ID	Lab ID	Container Type	Container pH	Preservative Added (mls)	Lot #
D-1	180-3644-D-11	Amber Glass 1 liter - Sulfuric Acid	2		
D-1	180-3644-E-11	Amber Glass 1 liter - unpreserved			
D-1	180-3644-F-11	Amber Glass 1 liter - unpreserved			
D-1	180-3644-G-11	Amber Glass 1 liter - unpreserved			
D-1	180-3644-H-11	Plastic 500ml - with Nitric Acid	2		
D-1	180-3644-I-11	Plastic 500ml - unpreserved			
D-1	180-3644-J-11	Plastic 250ml - with Sulfuric Acid	2		
D-1	180-3644-K-11	Voa Vial 40ml - unpreserved			
D-1	180-3644-L-11	Voa Vial 40ml - unpreserved			
D-1	180-3644-M-11	Voa Vial 40ml - unpreserved			
D-1	180-3644-N-11	Voa Vial 40ml - Hydrochloric Acid	P		
D-1	180-3644-O-11	Voa Vial 40ml - Hydrochloric Acid			
D-1	180-3644-P-11	Voa Vial 40ml - Hydrochloric Acid			
D-1	180-3644-Q-11	Voa Vial 40ml - Hydrochloric Acid			
D-1	180-3644-R-11	Voa Vial 40ml - Hydrochloric Acid			
D-1	180-3644-S-11	Voa Vial 40ml - Hydrochloric Acid			
D-1	180-3644-T-11	Voa Vial 40ml - with Sodium		0133440W	
D-1	180-3644-U-11	Voa Vial 40ml - with Sodium		0133440W	
D-1	180-3644-V-11	Voa Vial 40ml - with Sulfuric Acid		5R0032-11	
D-1	180-3644-W-11	Voa Vial 40ml - with Sulfuric Acid		5R0032-11	
TRIP BLANK	180-3644-A-12	Voa Vial 40ml - Hydrochloric Acid			
TRIP BLANK	180-3644-B-12	Voa Vial 40ml - Hydrochloric Acid			
TRIP BLANK	180-3644-C-12	Voa Vial 40ml - Hydrochloric Acid	2		